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Research Article

The Partogram: Knowledge, Attitude and Use by Healthcare Providers at Two Hospitals in the South West Region of Cameroon

Abstract

Background: The use of the partogram is critical in preventing maternal and perinatal morbidity and mortality. Our main objective was to assess the use of the partogram among healthcare providers at the Limbe Regional (L.R) and Bota District (B.D) hospitals. Specifically, we sought to determine the knowledge on the partogram among healthcare providers, determine the prevalence of use of the partogram, and compare the knowledge, attitudes and practices among healthcare providers on the partogram in Limbe.

Methods: This was a descriptive cross- sectional study involving 80 healthcare providers who were recruited through convenient sampling method. The study was carried out from December 2013 to March 2014. We checked already filled partograms and observed use of the partogram by healthcare providers. Data were collected with the use of a structured questionnaire and analyzed using Epi-info version 7.0 statistical software (CDC, Atlanta, GA, USA).

Results: Partograms were used in 35% of labour cases during the study period. Just 46.3% of healthcare providers had a fair knowledge on the use of the partogram. A comparison between the two hospitals showed that 50% of healthcare providers had a good knowledge on the partogram from B.D.H as against 7.7% at L.R.H. Majority of healthcare providers (97.5%) knew that the partogram was a useful tool. At the B.D.H, the partogram was frequently used when compared to L.R.H due to lack of supervision and follow up. In our study, 71.4% of the partograms were incompletely filled in both institutions.

Conclusion: Partograms are used only in 35 % of deliveries. More than two thirds of them have incomplete information. This has been due to lack of capacity building of healthcare providers on the use of the program, which if organised, will play a mojor role in improving labour and delivery care practices in this region.

Introduction

Although normal labour accounts for 80% of all deliveries, there might be some complications of labour [1]. It's worth noting that some of the maternal deaths are attributable to complications related to labour [2]. Some of these complications are obstructed labour which is responsible for 8% of maternal deaths [3] and postpartum haemorrhage which accounts for 10– 60% of maternal deaths worldwide [4]. In order to prevent prolonged labour and its complications, a tool was needed which could identify the abnormal progress of labour. Hence early detection and referral will not only reduce but prevent the occurrence of these complications. It was on this basis that the partogram was introduced [5].

The partogram is an instrument which is used to monitor labour. It is used in decision making in obstetrics. It contains various components that look at the progress of labour as well as maternal and fetal parameters. Some of the maternal parameters are: blood pressure, uterine contractions, drugs, heart rate, urinalysis and temperature while some of the fetal parameters are fetal heart rate, state of the membranes and colour of liquor [6]. A number of common partogram designs incorporate an alert and action line [7].

The partogram was first developed by Hugh Philpott [8], but first provided by Friedman [9]. This was to enable clinicians (midwives and doctors) plot examination findings from their assessments on labour. The belief that use of the partogram could be applicable in developed and developing countries led

to its introduction globally [10]. The use of the partogram is critical in preventing maternal and perinatal morbidity and mortality [11].

In our milieu, there are multiple potential reasons why the partogram is not used. Some health care providers have been trained on how to use the partogram but don't use it in health facilities where they work. Moreover, other trained healthcare providers believe the use of the partogram is time consuming and might not be necessary since the outcomes of normal labour remains unchanged. In some cases, some health professionals don't actually know how to use it, or have just a few ideas about its use. Also, it's not known whether the nature of the hospital (i.e. either the district or regional) has gotten influence on the knowledge, attitude and practice among healthcare providers (HCP). Our study sought to describe the demographic and professional profiles of healthcare providers in the Limbe Regional and Bota District hospitals, to determine the knowledge on the partogram among healthcare providers, to determine the prevalence of use of the partogram and to compare the knowledge, attitudes and practice in both institutions.

Materials and Methods

Study design and Setting

The study was a descriptive cross- sectional study among healthcare providers carried out in the Bota district hospital (BDH) and Limbe regional hospital (LRH) of the South West Region of Cameroon. The study was carried out from December 2013 to March 2014. The Limbe Regional Hospital is a secondary health facility in the South West Region. It is located in Limbe around the coast of the Atlantic Ocean and has all the services and units of a secondary health centre (Administrative, medical, laboratory, surgical, maternity, paediatrics etc). The LRH maternity is made up of the ward charge's office, a nursing station, two labour and delivery rooms, an antenatal care hall, a ward for nursing mothers and an observation room. The maternity unit has averagely nine healthcare providers and two gynaecologists. There is an average of four labour cases daily. The LRH is easily accessible. Besides, being the regional hospital, it serves as one of the referral centres for the South West Region. Therefore so many deliveries are being followed-up and effected in this hospital. On the other hand, BDH is also located in Limbe town. The maternity ward is a T-shaped building made up of the ward charge's office, a nursing station and a labour room (with one labour bed). This unit is headed by the ward charge. It consists of midwives, nurses, medical students. It has no gynaecologist. It has an average of 2 labour cases a day.

Study population and Sampling

The study population included all healthcare providers with age greater than 21, who were working in the maternities of the LRH and BDH and are usually involved in the monitoring of labour with the use of a partogram. All health care providers who were not willing to participate in the study and had not undergone any training in midwifery or in monitoring of labour and conducting deliveries were excluded from the study. The minimum sample sizes for the health care providers recruited and the number of partograms analysed, were calculated using the formula of Finite population correction for proportions and the formular for single proportions to be 76 health care providers and 42 partograms respectively. This calculations were done on the assumptions that about 50% of the study population didn't have adequate knowledge on the use of partogram. A total 80 health care providers who met the inclusion criteria as well as 42 partogram were however recruited.

Study procedure

After obtaining ethical approval from the Faculty of Health Sciences Institutional Review Board, and administrative clearance from the Regional Delegate of Public Health, we made contact with the hospital authorities, discussed with them and had authorization to carry out our study. Also, copies of the protocol were distributed to the above personalities. Semi structured pre tested questionnaires were used to abstract four categories of data namely: the demographic and professional profiles of healthcare providers, knowledge of HCP, common attitudes and practices by healthcare providers concerning the partogram. Most healthcare providers responded insitu to the questionnaire while some took theirs home to return with the following day. Also, in the maternity, delivery records with partograms were analyzed based on the grid

Data management and analysis

At the end of each day, the data collected were carefully cross- checked and safeguarded in preparation for entry over the weekends. Data were analyzed with use of Epi-info version 7.0 statistical software (CDC, Atlanta, GA, USA) and Microsoft Excel 2007.

To assess knowledge, we designed a composite test. It was scored on a total of 10. Opened ended questions (10) were used to avoid guessing. A score of less than 4 was graded as poor; 5-7 was graded moderate and more than 7 as a good mastery of the partogram. This score was used previously in a study carried out in Buea.

For comparison between the two hospitals, the predictor variable was the type of health facility while some of the outcome variables were: not always available, takes too much time to fill, limited knowledge and work load.

The prevalence was analyzed with Microsoft Excel 2007 and presented on a pie chart. The proportion of labour cases monitored with a partogram to the total number of cases were obtained and tabulated each week.

Descriptive statistics such as frequencies and proportions were used for the analysis of the quantitative data. Cross tabulations of variables were done, and chi-squared test ($x2$) was used to determine the statistical significance of differences of relative frequencies. A p-value of less than 0.05 was considered significant.

Results

Socio- demographic characteristic of healthcare providers

Of the 80 questionnaire respondents, there were 46 females (57.5%) and 34 males (42.5%). The ages ranged from 21 to 44 with a mean of 28.9 and a standard deviation of 2.4 years. The predominant age group was 21–25 years, representing 36.3% of the study sample. A plurality of the healthcare providers (43%) had the Ordinary level as their highest level of education. See table 1.

Prevalence of partogram usage

Out of the 120 deliveries during the study period, partograms were used in just 42 of them giving a prevalence of 35% while majority of the deliveries (65%) where where conducted without use of partogram.

Knowledge on the partogram among healthcare providers

The most responded question was the quotation on cervical dilatation (89.7%) while the least was that on the definition of the partogram (40.0%). This is shown on table 2. As shown on table 3 the composite test was used to evaluate the knowledge among healthcare providers. As many as 46.3 % of H.C.P had a moderate score.

Comparing the knowledge, attitudes and practices on the partogram use among healthcare providers in the LRH and BDH

A greater percentage of healthcare providers from the Bota hospital had a good score 14 (50.0%) compared to the Limbe Regional hospital 4(7.7%) as shown on the table 4. As many as 34.6% of healthcare providers mentioned that they had little or no knowledge of the use of the partogram. Also, among the 80 healthcare providers, 24.4 % mentioned that it took much time to fill the partogram. This is shown on table 5. As many as 96% of healthcare providers frm B.D.H correctly opened the partogram as shown on table 6. This partogram is usually opened at 4cm cervical dilation.

Discussion

The predorminant age group in the study was 21– 25 representing 36.3% of healthcare providers with a mean age of 30 years. It is similar to those from other studies in Buea of 20– 30 [12] and in Africa of less than 30 years in Cairo, Egypt [13]. This age group was the youngest age group and it's the working population. It was lower than that reported by Archa et al who found 30– 39 years and higher than that reported by Engida et al who found 19– 25 years as the predorminant age group. Most of the healthcare providers were state reistered nurses (23.8%) and majority of the healthcare providers had the Ordinary level as their highest level of education representing 43% of them. It is similar to a study carried out in Mangalore [14]. In Cameroon, entry into school of state registered nurses demands the General Certificate of Examination ordinary

Table 1: Socio- demographic data of Healthcare providers by gender

		Frequency (%) N= 80
Age		
	21- 25	29(36.3)
	26- 30	22(27.5)
	31- 35	19(23.8)
	36- 40	8(10.0)
	41- 45	2(2.5)
Sex		
	Male	34 (42.5)
	female	46 (57.5)
Level of Education		
	Postgraduate diploma or masters	7 (8.8)
	Medical Doctor	7 (8.8)
	Bacherlors in Nursing	8(10.0)
	Higher National Diploma in Nursing	15 (18.7)
	GCE ordinary level Certificate	34(42.5)
	GCE advance level Cerificate	9 (11.2)
Duration of practice		
	0-2 (years)	37(46.3)
	>2 − 4 (years)	5 (6.3)
	>4- 6 (years)	29(36.3)
	>6- 8 (years)	6 (7.5)
	>8- 10 (years)	2 (2.5)
	>10- 12 (years)	1 (1.3)
Type of facility		
	Regional hospital	54(67.5)
	District hospital	26(32.5)

Table 2: Responses by H.C.P to questions of the composite test

Questions	Correct response (%)	Incorrect reponse (%)
What is the partogram?	32 (40)	48 (60)
What is it used for?	54 (67.5)	26 (32.5)
At what cervical dilatation do you open it?	70 (89.7)	10 (10.3)
How often do you record FHR	45 (57.7)	35 (42.3)
How often do you record maternal BP?	36 (43.6)	44 (56.4)
How often do you record temperature?	34 (41.0)	46 (59.0)
How often do you do vaginal examinations?	50 (61.5)	30 (38.5)
For how long do you palpate for number of contractions?	39 (48.8)	41 (51.2)
How long (hours) is the action line from the alert line?	35 (42.3)	45 (57.7)
How do you know labour is not progressing normally?	35 (42.3)	45 (57.7)

levels or the BAC examination. This explains why most of the healthcare providers had ordinary levels. Rather in other studies done in Nigeria and Ethiopia, most of the healthcare providers were staff nurse midwives (57.7%) [16] and midwives (45.1%) [15], respectively. This is obvious for the common reason

that midwives are trained to deal with labour cases. As many as 37 healthcare providers representing 46.3% of the study population had a moderate score (5-7) using the composite test. It is contradictory from a study done in Buea where 36% of healthcare providers had a poor knowledge, and of 55.5% in Nigeria having moderate knowledge. The poor knowledge was attributable to the lack of training, lack of refresher courses on the partogram and also due to inexperience on its use.

The prevalence of partogram usage was 35%. Our prevalence was higher than those reported by Oladapo et al

Table 3: Knowledge on the Partogram Among Healthcare Providers

Score	Frequency	Percent
0-4	26	32.5%
5-7	37	46.3%
8-10	17	21.3%
Total	**80**	**100.0%**

Table 4: Comparism of knowledge on the partogram in the two hospitals

Type of health facility	Poor (%)	Moderate (%)	Good (%)	Total N= 80	P value (Fisher Exact test)
Limbe Regional hospital	23 (44.2)	25 (48.1)	4 (7.7)	52	**0.00001**
Bota district hospital	2 (7.2)	12 (42.8)	14 (50.0)	28	

Table 5: Attitude among healthcare providers in both hospitals

Attitudes	Hospital	Yes (%)	No (%)	Total N= 80	P value
Limited knowledge					
	Limbe Regional hospital	19 (35.2)	35 (64.8)	54	
	Bota district hospital	8 (30.8)	18 (69.2)	26	0.61
	Total	**27 (34.6)**	**53 (65.4)**	**80**	
Work load					
	Limbe Regional hospital	12 (23.1)	42 (76.9)	54	
	Bota district hospital	6 (23.1)	20 (76.9)	26	0.62
	Total	**18 (23.1)**	**62 (76.9**	**80**	
Leads to increase C/S					
	Limbe Regional hospital	8 (15.4)	46(84.6)	54	
	Bota district hospital	4 (15.4)	22 (84.6)	26	0.74
	Total	**12 (15.4)**	**66 (84.6)**	**80**	
Not always available					
	Limbe Regional hospital	8 (15.4)	46(84.6)	54	0.22
	Bota district hospital	7 (26.9)	19 (73.1)	26	
	Total	**15 (19.2)**	**65 (80.8)**	**80**	
Takes too much time to fill					
	Limbe Regional hospital	11 (21.2)	43 (78.8)	54	0.35
	Bota district hospital	8 (30.8)	18 (69.2)	26	
	Total	**19 (24.4)**	**61 (75.6)**	**80**	
Difficult to fill					
	Limbe Regional hospital	12 (23.1)	40 (76.9)	54	0.43
	Bota district hospital	4 (15.4)	22 (84.6)	26	
	Total	**16**	**62**	**80**	

Table 6: Opening of the partogram

Type of health facility	No (%)	Yes (%)	TOTAL N= 80	P value Fisher exact
Limbe Regional hospital	10(18.1)	45(81.8)	55	0.09
Bota district hospital	1 (4.0)	24(96.0)	25	
TOTAL	**8(10.4)**	**69(89.6)**	**80**	

of (9.8%) [17] and lower than that obtained by Ogwang S et al of (69.9%) [18]. The low prevalence could be attributed to little or no knowledge on partogram, and increased work load among healthcare providers. On the other hand, the high prevalence rate is attributed to good knowledge on partogram, availability of partograms, better supervision and positive attitudes towards its use. With respect to practical issues, 64.4 % of healthcare providers from B.D.H compared to 55.8% could easily detect on the partogram when labour was more likely to end in C/S. This is similar to a study done in Ethiopia [15]. The unavailability of obstetricians and doctors who could handle C/S was responsible for the higher detective rate in B.D.H.

Given that there was just a fair knowledge as well as a low prevalence of partogram use in our study, we call on frequent refresher trainings of midwives and other healthcare providers working in marternities on standard delivery care practices and the importance of partogram use in monitoring labour. Also, increase availability of this labour monitoring tool in maternities willl go a long way in increasing its usage at various health institutions

Conclusion

The prevalence of use of the partogram was low. Morever, a considerable amount of healthcare providers had a fair knowledge and had a positive attitude towards its usage. Therefore, organising capacity building of healthcare providers on the use of the program will play a major role improving labour and delivery care practices in this region.

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Author contributions

FNN protocol development, project development, data collection, and manuscript writing/editing.

ETA protocol development, project development and manuscript editing.

JAF data collection. Manuscript editing

TOE protocol development, general supervision, manuscript editing

Compliance with ethical standards.

Appendix 1

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